

Washington Location Finder Web Services User Guide

Version 2.00

5/5/2009

Introduction

The Washington State Department of Health has created two GIS Web services for use by State agencies. These services provide address correction and geocoding functions to consuming applications. They were developed with grant funding from the Environmental Protection Agency (EPA). Integration with EPA's Exchange Network Node at the Washington State Department of Ecology is planned in September of 2009.

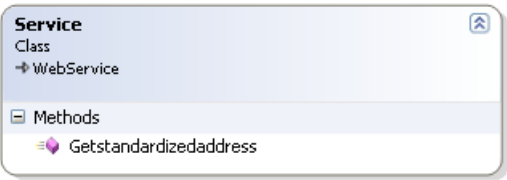
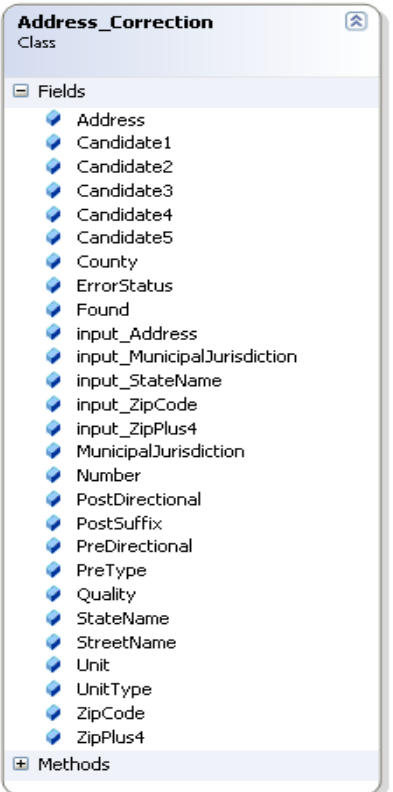
The address correction service accepts a street address and returns a corrected and standardized address. This service is intended to be used by any application that collects mailing or street addresses. The service corrects misspelled streets, missing components, invalid zip codes and city names. Up to five of the top candidates can also be returned using the address and city for the search. Software and data from MelissaData Inc. is updated quarterly and provides access to the USPS database for validating addresses. By using this service mailing return rates are reduced, the quality of data analysis is improved, geocoding match rates are higher, and storage of addresses in a database is enhanced.

The geocoding service accepts a street address and returns the location information. Addresses are matched against various County parcel and street centerline data layers. The County parcel ownership number can be returned if the address matches to a parcel site address. This service geocodes to zip code, post office, city, zip+4 and phone prefix locations if a street level match isn't possible. The latitude, longitude, accuracy and source values are also returned. This service uses the ArcGIS Server software from Environmental Systems Research Institute to perform the geocoding.

Address Correction Service Description

The HTML page for testing is available from <https://test-fortress.wa.gov/doh/addresscorrection/Service.aspx>

The WSDL is available from <https://test-fortress.wa.gov/doh/addresscorrection/Service.aspx?WSDL>

Service Name	Service Description	Interface Diagram	Class Diagram
Address Correction Service	Corrects mailing or street addresses.	 <p>The diagram shows a 'Service' class with a 'WebService' icon. It has a 'Methods' section containing 'Getstandardizedaddress'.</p>	 <p>The diagram shows an 'Address_Correction' class with a list of fields: Address, Candidate1, Candidate2, Candidate3, Candidate4, Candidate5, County, ErrorStatus, Found, input_Address, input_MunicipalJurisdiction, input_StateName, input_ZipCode, input_ZipPlus4, MunicipalJurisdiction, Number, PostDirectional, PostSuffix, PreDirectional, PreType, Quality, StateName, StreetName, Unit, UnitType, ZipCode, ZipPlus4. It also has a 'Methods' section.</p>

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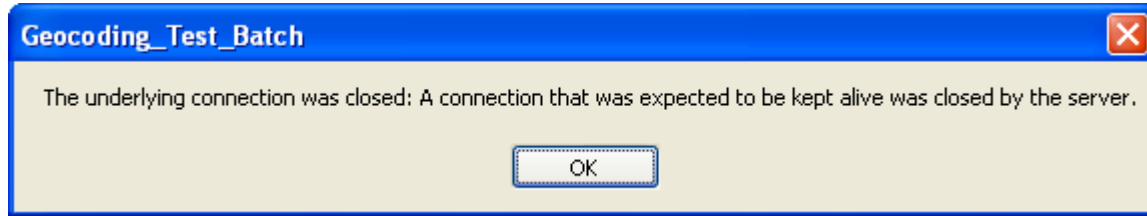
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Consumption Example

This assumes your Visual Studio 2005 web reference is named "correction" and VB.NET is the language.

```
Dim addr_obj As New correction.Service
Dim addr_corr As New correction.address_Correction
addr_obj.Url = "https://test-fortress.wa.gov/doh/addresscorrection/service.asmx"
addr_corr = addr_obj.Getstandardizedaddress("101 is real rd se", "Tumwat", "", "", "")
```

If your application receives the following error then you'll need to set the "keepalive" property to false.



Open the Web Reference > Reference.map > Reference.vb or .cs. Add this override function to the public class.

```
Protected Overrides Function GetWebRequest(ByVal uri As Uri) As System.Net.WebRequest
    Dim webRequest As System.Net.HttpWebRequest = MyBase.GetWebRequest(uri)
    webRequest.KeepAlive = False
    Return webRequest
End Function
```

Notes

Arguments for the getstandardizedaddress method are "address", "city", "zipcode", "state", "zip4".

Results are contained in the properties without an "input" prefix

Input_Address is required with either Input_MunicipalJurisdiction or Input_Zipcode.

Input_Zipcode should be in the 5 digit format.

Input_Statename should be in the 2 digit format.

State defaults to "WA" if not specified.

Transmission of the address is in clear text without encryption.

Geocoder Service Description

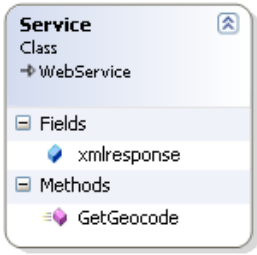
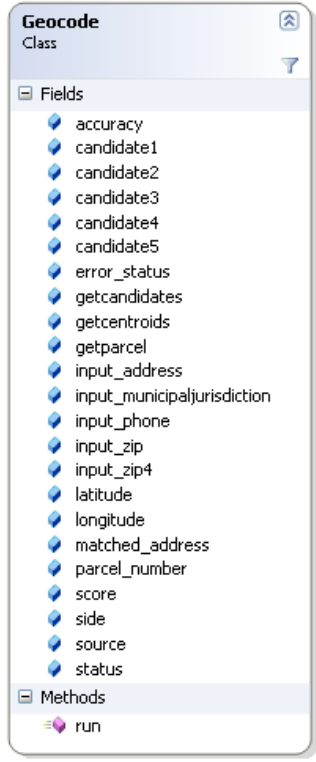
The HTML page for testing is available from <https://test-fortress.wa.gov/doh/gis/apps/geocoder/service.asmx>

The WSDL file is available from <https://test-fortress.wa.gov/doh/gis/apps/geocoder/service.asmx?WSDL>

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Service Name	Service Description	Interface Diagram	Class Diagram
Geocoder	Geocodes street addresses.		

Consumption Example

This assumes your Visual Studio 2005 web reference is named "geocoding" and VB.NET is the language.

```
Dim geo_obj As New geocoding.Service
```

```
Dim geo As New geocoding.Geocode
```

```
geo_obj.Url = "https://test-fortress.wa.gov/doh/gis/apps/geocoder/service.asmx"
```

```
geo = geo_obj.GetGeocode("101 Israel Rd SE", "98501", "", "", "", "boolean", "boolean", "boolean")
```

Notes

Arguments to GetGeocode are "address", "zip", "city", "zip4", "phone", "getparcel", "getcandidates", "getcentroids". Address and zip are required for a parcel or street match.

Match order; parcel centroids, streets, zip4 centroids, city centroids, zip centroids, post offices, phone prefix.

Reference data is for Washington State only.

A county parcel number is only returned if the address is matched to the parcel centroids reference layer.

If the "getparcel" argument is "true" then the parcel number search will be performed after a parcel match.

If the "getcandidates" argument is "true" then a list of candidates will be provided.

If the "getcentroids" argument is "true" then geocoding will include centroid matching.

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Sample Result Matrix

Reference Data	Status	Score	Parcel Number	Accuracy	Horizontal Accuracy
Parcel Centroid	U,M	100 - 75	12917210800	High, Medium	<100 ft.
TIGER 2007 Streets	U,M	100 - 75		High, Medium	<300 ft.
Zip +4 Centroid	U	50		Low	<1000 ft.
Zip 5 Centroid	U	40		Low	< 10 miles
GNIS Centroid	U	40		Low	< 10 Miles
Post Office Centroid	U	30		Low	< 20 Miles
Phone Prefix Centroid	U	25		Low	< 20 Miles

Horizontal Accuracy

The horizontal accuracy values in the sample matrix above represent a general guideline. Horizontal accuracy is generally higher in urban areas and less accurate in rural areas. Based on the reference data used, the position of a geocode can range from exact to miles from the correct position. The accuracy is also relative to the target location of an address (e.g. mailbox, condo, driveway, rooftop of structure). For geocodes using parcel centroids the size and shape of the parcel has a direct impact on the accuracy.

For more information: <http://www.ij-healthgeographics.com/content/2/1/10>

Possible Return Values for the "error_status" element:

- An Address Search requires a 5 digit zip code.
- A ZIP Plus4 search requires a 5 digit zip code.
- Invalid Input
- Not Geocoded and Centroids Weren't Searched
- Address not found, and no candidates.
- Centroid match only to GNIS
- Centroid match only to Zip 4
- Centroid match only to Zip 5
- Centroid match only to Post Office
- Centroid match only to Phone Prefix
- Other Potential Troubleshooting Messages

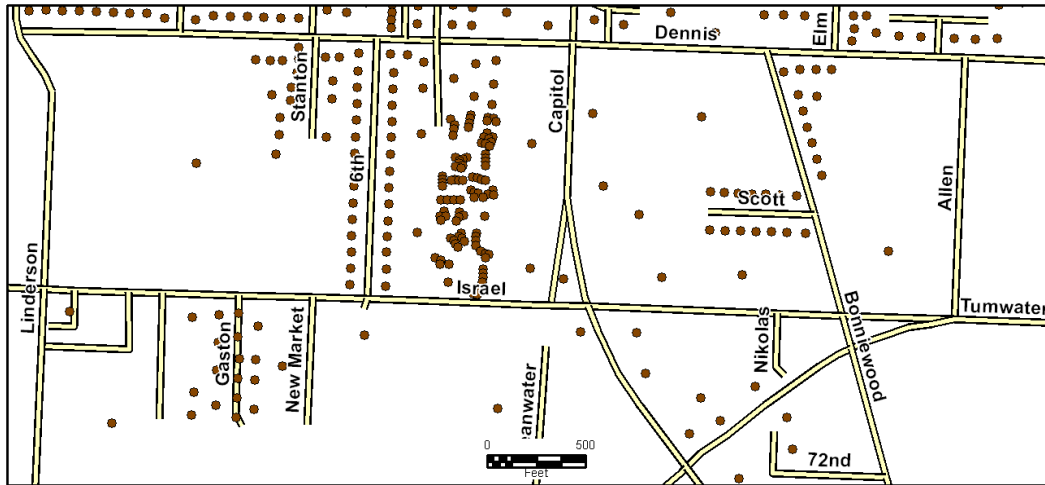
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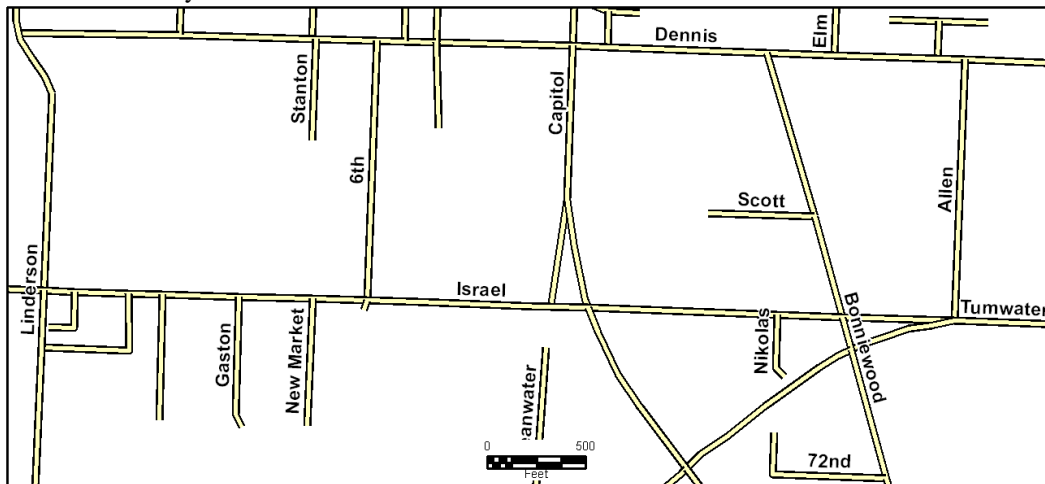
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Reference Data Samples

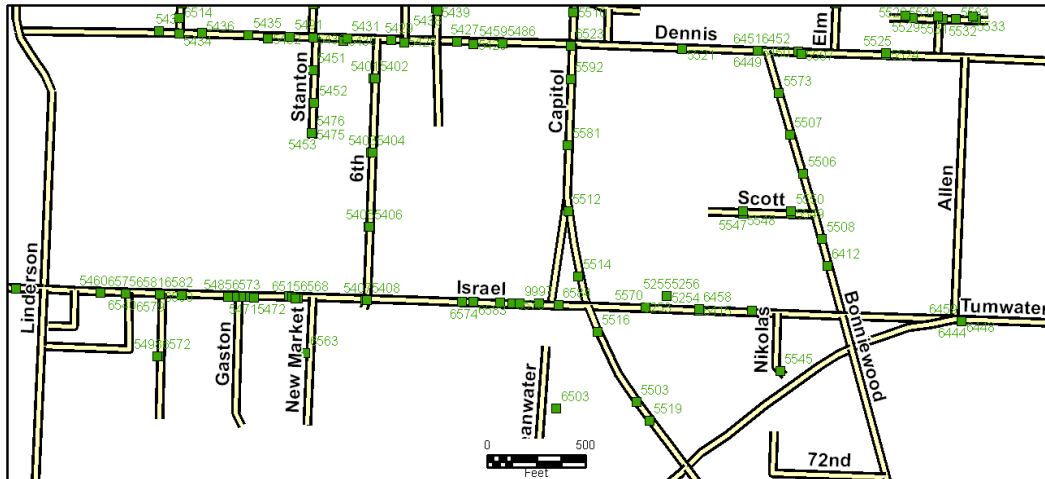
Parcel Centroids



TIGER 07/Tele Atlas 03/County Roads

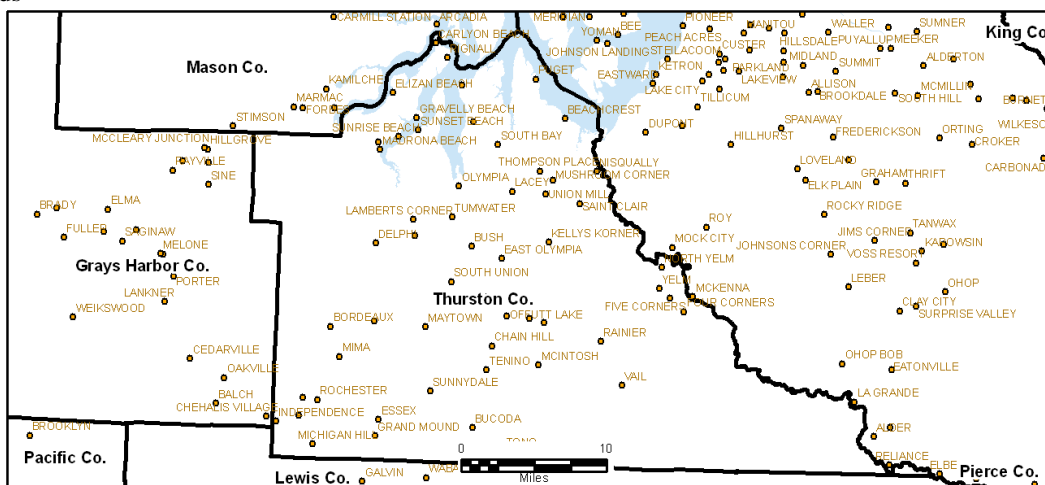


Zip +4 Centroids

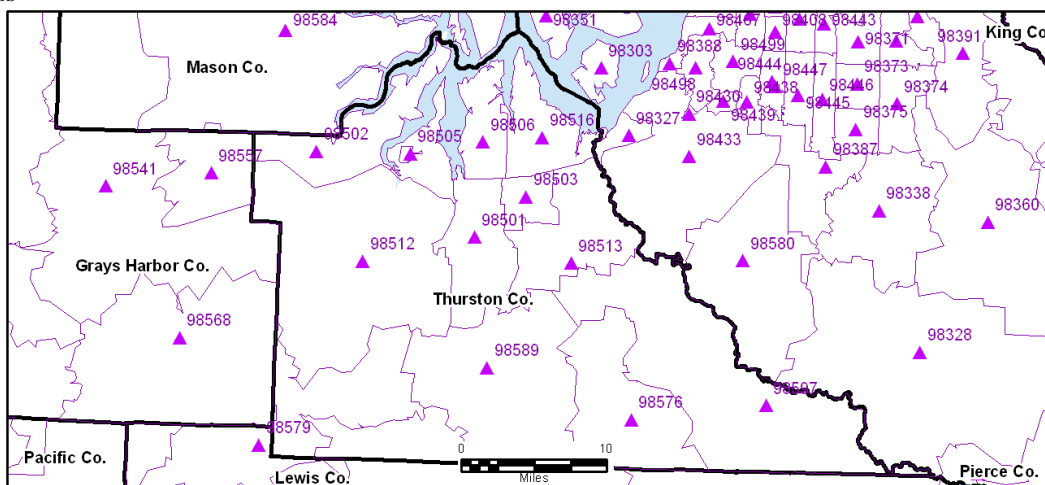


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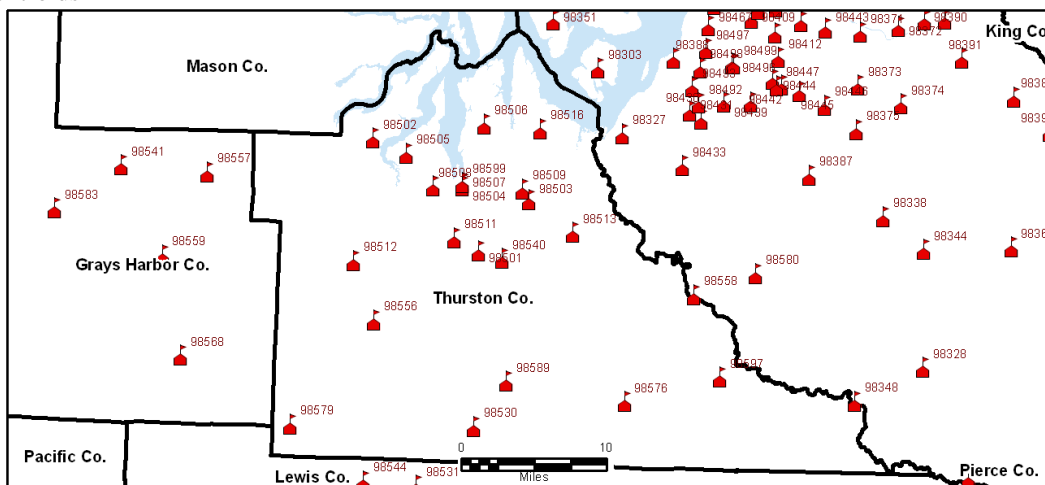
GNIS Centroids



Zip 5 Centroids



Post Office Centroids

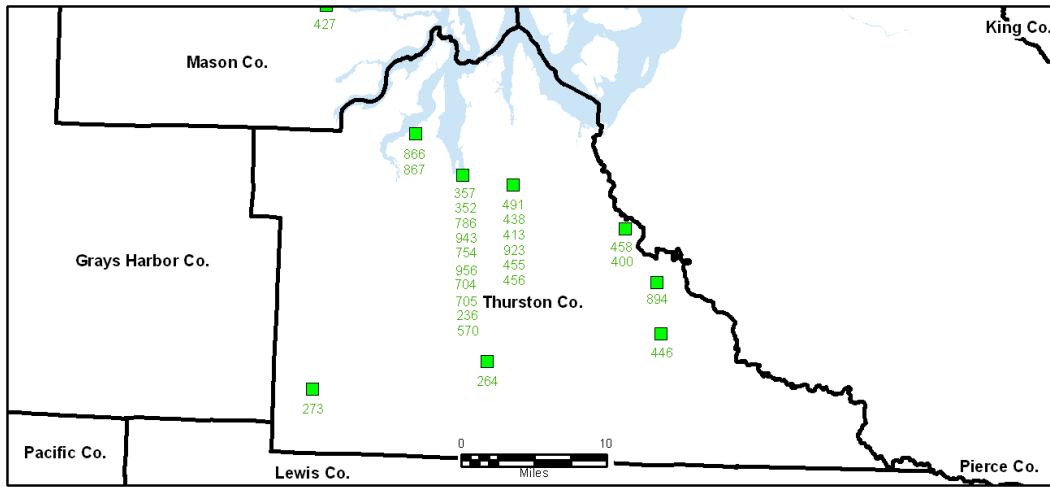


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Phone Prefix Centroids



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